

A new species of the *Glaphyromorphus isolepis* Species Group (Lacertilia; Scincidae) from Sumba Island, Indonesia

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Abstract

The new species *Glaphyromorphus butlerorum* is described from one locality in East Sumba, Indonesia. It differs from syntopic *G. emigrans* in body proportions and in details of scalation.

Introduction

In a recent paper on the *Glaphyromorphus isolepis* Species Group, Greer (1990) recognized six species including three from islands of the Lesser Sundas (Nusa Tenggara), Indonesia. Two of the Indonesian species, the recently described *G. timorensis* Greer, 1990 and *G. antoniorum* (Smith, 1926), are found only on Timor. By contrast, *G. emigrans* (Lidth de Jeude, 1896) is widely distributed in the region, with records as far west as Komodo and as far east as Teun (see Figure 1).

Here we describe a fourth species of this complex, collected in 1989 during the course of a vertebrate faunal survey of East Sumba. This fieldwork represents one part of a wider biogeographic and systematic survey of Nusa Tenggara, being undertaken by the Western Australian Museum in collaboration with the Museum Zoologicum Bogoriense.

Systematics

Glaphyromorphus butlerorum sp. nov.

Figures 2, 3

Holotype

R101829, in Western Australian Museum, adult female, collected by R.A. How, D.J. Kitchener, N. Cooper, A. Suyanto and J. Dell at Ngallu, East Sumba, in 10°06'30"S and 120°41'30"E, on 8th June 1989.

Paratypes

R101908 and R101860, adult females, data as for holotype.

Diagnosis

A small, relatively short-limbed member of the *Glaphyromorphus isolepis* Species Group (*sensu* Greer 1990), differing from all other members of this group in the following combination of characters: upper labials 6, paravertebral scales 59-61, and

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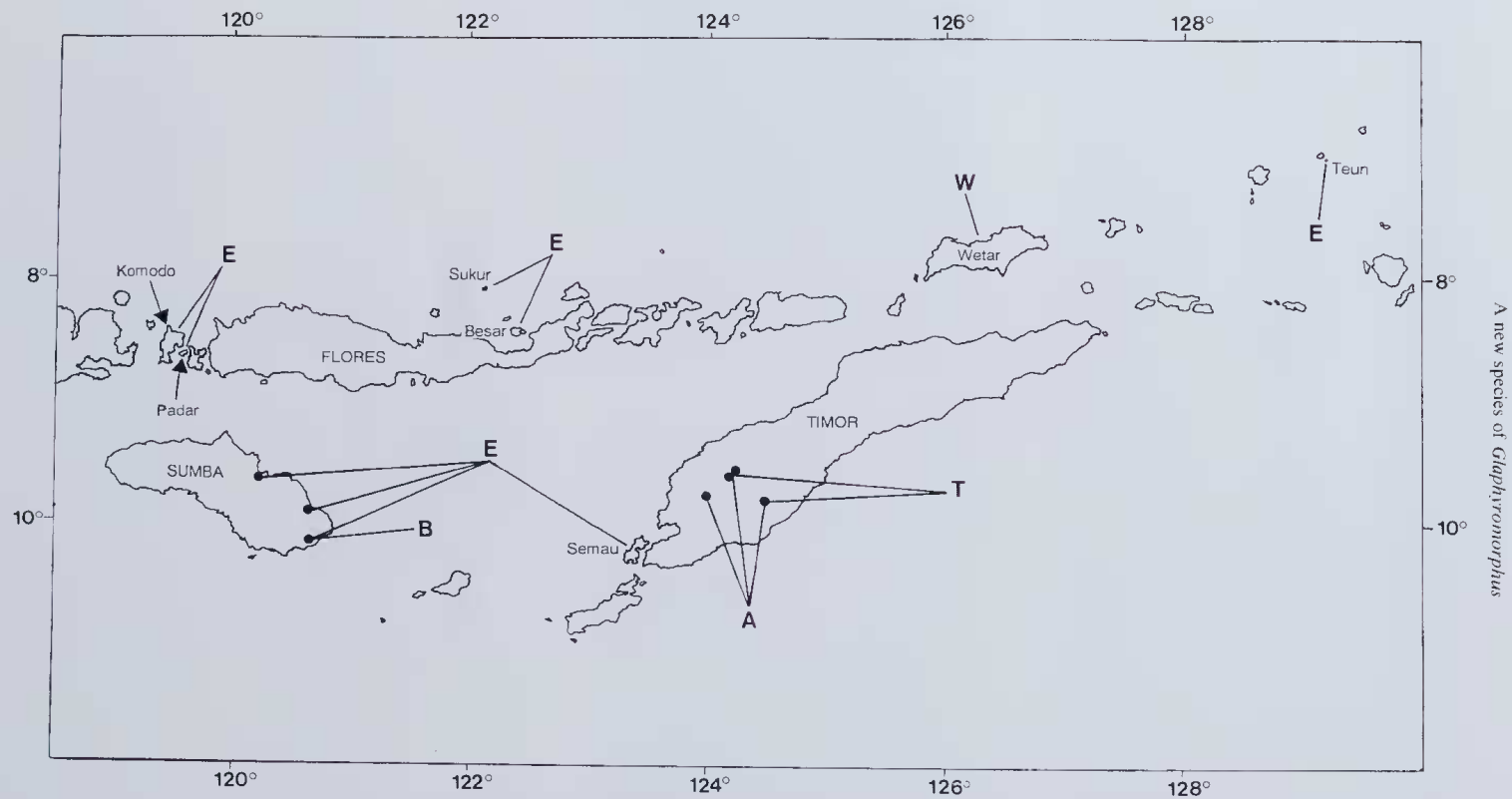


Figure 1 Map of the eastern portion of Nusa Tenggara showing collection localities of five taxa of the *Glaphyromorphus isolepis* Species Group. **B:** *G. butlerorum*; **E:** *G. emigrans emigrans* (including "mertensi"); **W:** *G. e. wetariensis*; **A:** *G. antoniorum*; **T:** *G. timorensis* [the record for Teun is based on Auffenberg (1980); his source is not stated].



Figure 2 Holotype of *G. butlerorum* photographed in life by N.A. Cooper.

hind limbs 19.6-24.0% of SVL. It further differs from syntopic *G. emigrans* in its relatively shorter fore-limbs (15.2-18% of SVL v. >20%), lower subdigital lamellar counts (15-17 v. 18-21 on pedal digit IV; 8-9 v. 11-12 on manal digit III), and usually lower supraciliary count (6-7 v. 7-9).

Description

A small, indistinctly patterned, brown skink, with non-overlapping pentadactyl limbs, and relatively short fingers and toes.

Snout-vent length (SVL) to 50mm; tail evidently as long or longer than body (all specimens have partially regenerated tails); fore-limbs 15.2-18.0% of SVL; hind-limbs 19.6-24.0% of SVL; subdigital lamellae of third (longest) finger 8 (N=1) or 9(2), of fourth finger 7(1) or 8(2), of fourth toe 15, 16 or 17; with distinct keel on all pedal lamellae, and on distal lamellae of fingers; paravertebral scale count 59, 60 or 61; paravertebral scales not enlarged; inner preanals greatly enlarged, overlapping and almost covering outer preanals.

Rostral in broad contact with frontonasal, contact with first supralabial at level of anterior margin of nostril; supranasals absent; frontonasals separate, each prefrontal smaller than frontonasal; frontal approximately 1.7 times as long as wide; supraoculars usually 4 on each side, first two in contact with frontal (3 on each side in R101829, due to fusion of supraoculars 2 and 3); frontoparietals and interparietal distinct, subequal; parietals in broad contact behind interparietal; nuchals 0-3 on each side.

Nostril situated in lower half of nasal; loreals 2, posterior one slightly larger but not higher than anterior; preoculars 2, lower larger than upper and in series with loreals; supracillaries usually 7: first to third large and contacting first suprocular; fourth and fifth low and contacting second and third suprocular respectively; sixth and seventh large, latter wedging between last supraocular and upper pretemporal (supracillaries 6 on one side of R101860 due to fusion of second and third scales of typical pattern); subocular scales in complete series: presuboculars 2, posterior larger and wedging deeply

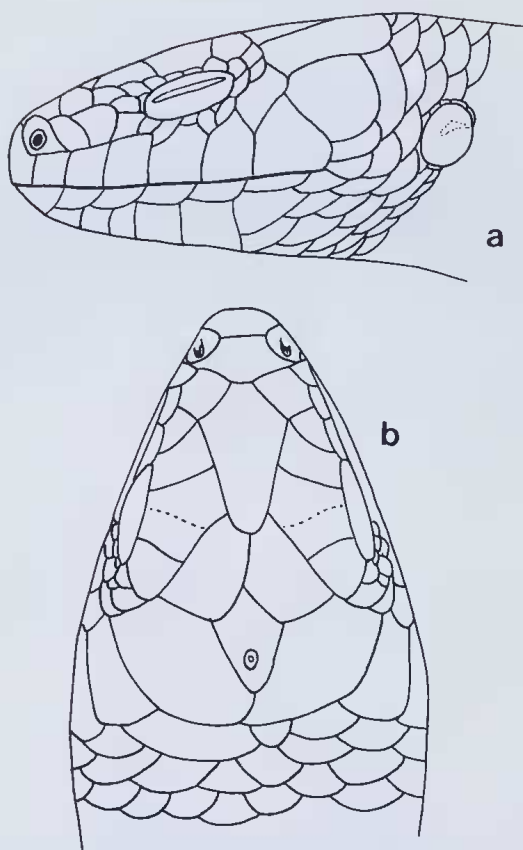


Figure 3 Head scalation of the holotype of *G. butlerorum* in a) lateral and b) dorsal views. The large, second supraocular of this specimen represents an abnormal condition resulting from fusion of the second and third supraoculars; the location of this suture in other specimens of the species is indicated by the dashed lines. Detail of palpebral scalation is not shown.

between supralabials 3 and 4; suboculars small, distinguishable from palpebral scales only in presence of pigment; postsuboculars 2, anterior one larger and wedging deeply between supralabials 4 and 5; pretemporals 2, upper larger than lower; single primary temporal; secondary temporals 2, upper overlapping lower; supralabials 6, fourth beneath eye, posterior 3 larger than anterior 3; postsupralabials 2.

Mental large, opposes rostral and first supralabial on each side; infralabials usually 5 on each side, but unilaterally reduced to 4 on two specimens; postmental contacts first infralabials only, followed by two rows of enlarged chin shields.

Auricular fossa approximately one half of area of orbital fossa, vertically ovate, without auricular lobules; tympanum deeply recessed in fossa.

Eyelid moveable; with row of 5 enlarged, semi-transparent scales.

Osteology. Palate (exposed by dissection of R101908) lacking pterygoid teeth; palatal rami of pterygoids in broad medial contact, excluded from infraorbital vacuity by process of ectopterygoid.

Colour. Pattern (based on R101829 and R101908) indistinct except on head. In preservative ground colour of dorsum brown; body forward of axilla and head dashed with dark brown, arranged in irregular rows; lateral surface dark brown spotted with white, grading evenly into brown of dorsum and immaculate white of venter. Head with dark brown lateral stripe, runs from above ear, through eye, to nostril; supra- and infra-labial scales dark brown, each scale with a central white spot; posterior border of postmental and chin shields dark brown; gular region with dark longitudinal bars (well-developed on R101908; indistinct on R101829). Dorsum of tail as for body; lateral surface with distinct dorso-lateral (dark brown flecked with white, approximately $1\frac{1}{3}$ scale width) and lateral (dark brown, less than 1 scale width) stripes, separated by pallid zone; ventral surface white with 3 rows of transverse, posteriorly concave, brown dashes. R101860 is paler brown and is less prominently marked.

Details of holotype (R 101829). SVL 50mm; tail 61mm of which 26mm is regeneration; head width 5.8mm; forelimb 8mm; hindlimb 12mm; scales at midbody 27; subdigital lamellae of third finger 8, of fourth finger 7, of fourth toe 15; paravertebral scales 61; supraciliaries 7 on both sides; nuchals 1/0; infralabials 5 on both sides.

Distribution and habitat. Known only from the type locality on Sumba, where it is syntopic with *G. emigrans*. All known specimens of *G. butlerorum* were purchased from local collectors, hence precise habitat data are not available. The landforms around Ngallu consist of a low escarpment of Tertiary limestone, incised by a major and several minor drainage systems. Immediately surrounding the village were gardens of banana and coconut on shallow soils interspersed with limestone outcrops. The river valley supported dense litter to 30 cm under moist evergreen forest.

Local collectors reported catching *G. butlerorum* and *G. emigrans* in rainforest litter. *Emoia similis*, *Lamprolepis smaragdina* and *Sphenomorphus florensis* were also obtained in this habitat.

Each of the three known specimens have well-differentiated but quiescent ovaries. This finding is consistent with data for other Nusa Tenggara *Glaphyromorphus*, among which reproduction is strongly seasonal, with vitellogenesis occurring in the late dry to early wet season (i.e., October-December; Greer 1990).

Etymology

After W.H. and M. Butler whose continuing financial support of natural science fieldwork in the Western Australian Museum helped make possible the herpetological survey of Sumba Island, Indonesia.

Remarks

The generic name *Glaphyromorphus* Wells and Wellington, 1983 is available under the recent Decision of the International Commission of Zoological Nomenclature (1991:337-8). The name is used in the revised sense of Greer (1989, 1990).

Placement of the new species in Greer's *Glaphyromorphus isolepis* Species Group is supported by the absence of auricular lobules, details of palatal osteology, the presence of five (or fewer) infralabials, the relative shortness of the limbs, and by the overall



Figure 4 A *Glaphyromorphus emigrans* (R101859) from Ngallu, East Sumba photographed in life by N.A. Cooper.

similarity in body form and head scalation between *G. butlerorum* and such taxa as *G. emigrans* and *G. antoniorum*.

Two names have been applied previously to *Glaphyromorphus* from Sumba: *Lygosoma emigrans* Lidth de Jeude, 1895, and *Lygosoma everetti* Boulenger, 1897 (the latter described without reference to the former). These taxa were regarded as conspecific by de Rooij (1915) and Forcart (1953), and more recently by Greer (1990) who examined relevant type material. Our comparative material includes thirteen specimens of a *Glaphyromorphus* from Sumba which agree closely with *emigrans* as described by Lidth de Jeude, Boulenger (as *everetti*) and de Rooij (see 'Other material examined'; and Figure 4).

The specific distinction of *G. butlerorum* from syntopic *G. emigrans* is readily apparent from meristic data (see Table 1): *G. butlerorum* shows consistently lower paravertebral, supralabial and subdigital lamellar counts than *G. emigrans*. *Glaphyromorphus butlerorum* is also less prominently patterned than *G. emigrans*, the primary difference being the presence of a distinct dorsolateral stripe in the latter species (compare Figures 2 and 4). The presence of two distinct species in the Ngallu sample is further substantiated by the absence of shared alleles (i.e., "fixed" genetic differences *sensu* Richardson *et al.* 1986) at the Acon-1, Adh and Mpi loci (S.C. Donnellan pers. comm.).

Other taxa which warrant comparison are *G. emigrans wetariensis* Mertens, 1928, from Wetar Island, *G. antoniorum* Smith, 1927 and *G. timorensis* Greer, 1990 from

Table 1 Summary meristic data for various Indonesian *Glaphyromorphus* species, subspecies and populations. Data for *G. butlerorum*, *G. emigrans* (Sumba), *G. antoniorum* and *G. timorensis* pertain to specimens listed in 'Other material examined'. Data for *G. emigrans* (Komodo) are from Auffenberg (1980) and for *G. e. wetariensis* are from Dunn (1927) and Mertens (1928). Key to variables: SVL = snout-vent length; FL = forelimb length; HL = hindlimb length; MBS = mid-body scale rows; PV = paravertebral scales; SL = supralabial scales; SC = supraciliary scales; LT4 = lamellae under fourth toe; LF3 = lamellae under third finger.

	<i>G. butlerorum</i> (N=3)	<i>G. emigrans</i> (Sumba: N=13)	<i>G. emigrans</i> (Komodo: N=23)	<i>G. e. wetariensis</i> (N=1-13)	<i>G. antoniorum</i> (N=156-158; 11 for PV)	<i>G. timorensis</i> (N=14)
Max. SVL	50	54	65	46	67	93
FL (as % SVL)	15.2-18.0	20.3-30.3	—	21.7	16.4-28.9	18.3-25.6
HL (as % SVL)	19.6-24.0	29.2-39.4	—	31.5	29.8-35.7	26.5-36.1
MBS	26-28	25-27	26-30	26-30	29-33	35-37
PV	59-61	67-75	—	—	67-80	79-86
UL	6	6-7	—	—	7	7
SC	6-7	7-9	—	—	6-9	7-9
LT4	15-17	18-21	17-21	17-21	15-21	17-22
LF3	8-9	11-12	—	—	8-11	10-11

Timor, and "*Sphenomorphus*" *mertensi* Darevsky, 1964 from Padar. Judging from data presented by Dunn (1927) and Mertens (1928), *G. e. wetariensis* differs from *G. butlerorum* in having relatively longer limbs, higher subdigital lamellar counts for the fourth toe (see Table 1), and in being more strongly patterned. Of the Timorese taxa, *G. timorensis* is not only considerably larger than *G. butlerorum*, but also shows numerous meristic differences (see Table 1). *Glaphyromorphus antoniorum* is similar to *G. butlerorum* in overall size and limb proportions, but differs from the new species in having higher midbody, paravertebral, subdigital lamellar, supralabial and supraciliary scale counts (see Table 1). Both of the Timorese taxa are also more strongly patterned than *G. butlerorum*. "*Sphenomorphus*" *mertensi* from Padar is regarded by Auffenberg (1980) as conspecific with "*Sphenomorphus*" *emigrans*, which he records from adjacent Komodo Island. Meristic data provided by Auffenberg (1980) for the Komodo population show slightly higher midbody and subdigital lamellar counts than found in typical *G. emigrans*, moreover his description suggests other morphological differences (e.g., the presence of auricular lobules in "*S*" *mertensi*). While "*S*" *mertensi* (Padar, Komodo) may yet prove to be distinct from typical *G. emigrans* (Sumba etc.), there appears to be no special resemblance between "*S*" *mertensi* and the new species described herein.

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Other material examined

Glaphyromorphus emigrans: W.A. Museum (R) 101841, 101859, 101861-2, 101894-902.

Glaphyromorphus antoniorum: W.A. Museum — 158 specimens including (R) 106417-27, 106429-51, 106456-67.

Glaphyromorphus timorensis: W.A. Museum (R) 106449, 106457, 106466-7, 106495-6, 106498-9, 106605, 106675, 107400, 107402-3, 107406.

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